

DOCKET NO: 254659US0PCT

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :  
VOLKER HENNIGE, ET AL. : EXAMINER: COLE, E.M.  
SERIAL NO: 10/501,713 :  
FILED: JULY 19, 2004 : GROUP ART UNIT: 1798  
FOR: CERAMIC MEMBRANE BASED :  
ON A SUBSTRATE CONTAINING  
POLYMER OR NATURAL FIBRES,  
METHOD FOR THE PRODUCTION AND  
USE THEREOF

REPLY BRIEF

COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

SIR:

Responsive to the Examiner's Answer of November 10, 2010, Appellants submit the following Reply Brief.

I. STATUS OF THE CLAIMS

Claims 1, 3-5, 7-12, 14-22, 24-28, 30-38, 40, 46-51 and 53-59 are pending in the present application. All of the pending claims stand rejected. The rejection of all of the pending claims is appealed.

VI. GROUND OF REJECTION

(A) Claims 1, 3-5, 7-12, 14-22, 24-28, 30-31, 33, 40, 46-51, 53-59 are rejected as obvious under the meaning 35 U.S.C. § 103(a) over Penth (U.S. 6,309,545) in combination with Bishop (U.S. 5,639,555).

(B) Claims 32, 34-38 and 49 are rejected as obvious under the meaning 35 U.S.C. § 103(a) over Penth in combination with Bishop and Sassa (U.S. 5,324,579).

(C) Claims 1, 3-12, 14-22, 24-28, 30-38, 40, 46-51 and 53-59 are provisionally rejected for non-statutory obviousness-type double patenting over Claims 1-36 of co-pending application 10/504,144 in combination with Penth and Bishop.

(D) Claims 1, 3-12, 14-22, 24-28, 30-38, 40, 46-51 and 53-59 are provisionally rejected for non-statutory obviousness-type double patenting over Claims 1-25 of co-pending 10/524,143 in combination with Penth and Bishop.

(E) Claims 1, 3-12, 14-22, 24-28, 30-38, 40, 46-51 and 53-59 are provisionally rejected for non-statutory obviousness-type double patenting in view of Claims 1-25 of co-pending 10/524,669 in combination with Penth and Bishop.

(F) Claims 1, 3-12, 14-22, 24-28, 30-38, 40, 46-51 and 53-59 are provisionally rejected for non-statutory obviousness-type double patenting over Claims 1-24 of co-pending 10/519,097 in combination with Penth and Bishop.

(G) Claims 1, 3-12, 14-22, 24-28, 30-38, 40, 46-51 and 53-59 are provisionally rejected for non-statutory obviousness-type double patenting over Claims 1-29 of co-pending 10/575,268 in combination with Penth and Bishop.

(H) Claims 1, 3-12, 14-22, 24-28, 30-38, 40, 46-51 and 53-59 are provisionally rejected for non-statutory obviousness-type double patenting over Claims 1-24 of co-pending 10/575,759 in combination with Penth and Bishop.

(I) Claims 1, 3-12, 14-22, 24-28, 30-38, 40, 46-51 and 53-59 are rejected for non-statutory obviousness-type double patenting over Claims 22-42 of co-pending 10/575,734 in combination with Penth and Bishop.

## VII. ARGUMENT

**(A-1) The rejection of the claims as obvious over the Penth and Bishop references should be withdrawn because the cited art fails to describe or suggest a non-woven polymeric fiber substrate having a *porosity* of more than 50%.**

Appellants' August 16, 2010 Appeal Brief pointed out that the Examiner's citation to a particular example in the Penth reference was insufficient basis to establish a *prima facie* case of obviousness. In particular, Appellants pointed out that the Penth reference does not describe any substrate or substrate material "having a *porosity* of more than 50%" as recited in the present claims.

The Examiner responded in the Examiner's Answer by arguing that the particular porosity or theoretical porosity of the cited example in the Penth reference doesn't matter. The Examiner then further cited to disclosure at column 3, lines 1-10 and column 4, lines 11-16 of the Penth reference as evidence that it would be obvious to optimize the *size of pores* of the Penth material to arrive at a porosity of more than 50% (see page 16, lines 9-13 of the

Examiner's Answer). The Examiner failed, however, to prove that the newly-cited disclosure of Penth is relevant to the *porosity* recited in the present claims, e.g., a porosity of more than 50%.

The Examiner incorrectly asserted that the disclosure at column 4, lines 11-16 relates to the mesh size or porosity of the Penth permeable composite material. Column 4, lines 11-16 of Penth describes properties relating to an optional "expanded metal" or "granular sintered metal" that is present *in addition to* the Penth permeable composite material. The Examiner's assertion that the pore size described at column 4, lines 11-16 relates to the porosity of the present claims is not supported by the evidence of record.

At best Penth describes mesh size in the paragraph bridging columns 3 and 4. However, such mesh size is not the porosity of the present claims. Importantly, Appellants showed in the Appeal Brief that a material having a mesh size of 90  $\mu\text{m}$  on the Tyler scale has a pore width of only 0.2-0.4  $\mu\text{m}$  which likewise corresponds with the porosity of only 0.3%. Nowhere has the Examiner shown, nor can the Examiner show, that a mesh size of 500  $\mu\text{m}$  overlaps or suggests a porosity of more than 50%.

Appellants again respectfully submit that the Examiner failed to set forth a *prima facie* case of obviousness and respectfully request withdrawal of the rejection.

**(A-2) The cited art does not suggest that glycidyl- or methacryloyloxy-functionalized silanes are equivalent to the coupling agents taught in the Penth patent and thus the basis for the Examiner's combination of Penth and Bishop is insufficient to sustain the rejection.**

The Examiner responded to Appellants' argument (A-2) of the August 16 Appeal Brief on page 17 of the Examiner's Answer. The Examiner argues that the Bishop reference was used in a manner that permits the Examiner to mischaracterize the explicit teachings of the reference (see page 17, lines 6-7 where the Examiner argues the Bishop reference is only

used as a "teaching reference"). The Examiner argues that the Bishop reference was used only to show that certain silane coupling agents are allegedly equivalent and that any other disclosure in the reference isn't relevant to the patentability of the presently pending claims.

Appellants pointed out on pages 9-11 of the August 16, Appeal Brief that Bishop describes the use of glycidyoxy- and methacryloyloxy-functionalized silanes together with a tris(silylorgano)amine. The Examiner confuses and broadens a very particular disclosure in the Bishop reference in manner that is not supported by the evidence of record.

Bishop describes the use of glycidyoxy- and acryloyloxy-functionalized silanes only in combination with a tris(silylorgano)amine (the combination of silane coupling agent and tris(silylorgano)amine is described in the Bishop examples). When used in combination the functionalized silanes and tris(silylorgano)amine react to form a new compound. It is the reaction product of this material that matters, the Examiner has not shown this reaction product is the same as the glycidyoxy-functionalized silane or methacryloyloxy-functionalized silane of the present claims.

Applicants thus submit that the Examiner further failed to set forth a *prima facie* case of obviousness and respectfully request withdrawal of the rejections.

**(A-3). The cited art does not suggest the particular composition of Claim 53 which excludes the compositions of at least the Bishop reference.**

Appellants' argued on pages 11 and 12 of the August 16 Appeal Brief that the particular composition of Claim 53 is exclusive of the Bishop compositions. The Examiner failed to explain how the presently claimed composition can be rendered obvious by disclosure that is excluded by the subject matter of Claim 53. For Claim 53, where the claimed invention explicitly excludes the prior art, the Examiner must explain why one of

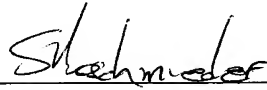
skill in the art would nonetheless rely on the reference as inspiration to arrive at the claimed invention.

In this respect, among others, the Examiner failed to set forth a *prima facie* case of obviousness.

For the reasons stated above with particularity, Appellants respectfully request the Board OVERTURN the rejections.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
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